

REMARKS

By this amendment, claim 1 is revised, claims 12-19 are canceled, and new claim 20 is added to place this application in immediate condition for allowance. Currently, claims 8-11 and 20 are before the Examiner for consideration on their merits. Claims 13-15 and 19 are canceled since they are drawn to non-elected claims. Claim 12 is incorporated into claim 8 so it is canceled. The limitation found in claim 16 is incorporated into claim 8, so it is canceled. Since claims 17 and 18 replicate claim 16, they are also canceled.

In review, claim 8 has been revised to: (1) further limit the steel material being processed; (2) further define the nature of the formed film; and (3) specify that the conversion treatment is carried out in the absence of fluorine ions. As noted above, the changes to claim are derived from other claims and no issues of new matter are raised by these changes. Claim 20 is added to specifically define the invention in terms of treating an oil well pipe.

In light of the changes to claim 8, it is submitted that the rejection based on United States Patent No. 5,797,987 to Rossio is moot and the only rejection to be addressed is that based on United States Patent No. 3,798,074 to Esler.

In the rejection based on Esler, the Examiner contends that Esler anticipates claims 8 and 12. The support for this allegation of anticipation is that Esler forms a protective surface film made of Zn using phosphoric acid and potassium. The Examiner also asserts that Esler does not use fluoride ions for the coating. Regarding the limitation regarding a conversion coating, the Examiner admits that Esler does not

mention this term. However, it is contended that since the same coating composition is employed by Esler, the same chemical conversion properties and film would be present.

First, Applicants wishes to reiterate the fact that the invention and Esler are not in the least related. Esler seeks to protect metallic or glass surfaces with a transparent and water resistant coating that is applied to the surface of the material being treated and cured. One primary purpose of the coating is to protect stainless steel from being scratched or marks, such marks being difficult to remove once they appear, see col. 6, lines 1-5.

In contrast, the invention is aimed at the ability to form a chemical conversion film using a chemical conversion treatment on materials containing high levels of chromium. The Background Art section of the application demonstrates that it has been difficult to produce such a chemical conversion film on oil well steel pipes containing high amounts of chromium. Prior art techniques are required to be practiced multiple times, but even still do not work on high chromium steels such as 13%Cr, see page 1, lines 20-28 of the specification. With the need to protect high chromium oil well pipes, a need has developed to form chemical conversion films on these materials to prevent galling during the threading process. The present invention has solved this problem by the discovery that the presence of potassium, preferably in the form of potassium tetraborate, is effective to keep the pH value of an aqueous solution of zinc phosphate and manganese phosphate constant when a steel material contacts a treatment solution so that a concentration of phosphoric acid (total acid strength) is stabilized to promote a chemical conversion reaction effectively.

REMARKS

By this amendment, claim 1 is revised, claims 12-19 are canceled, and new claim 20 is added to place this application in immediate condition for allowance. Currently, claims 8-11 and 20 are before the Examiner for consideration on their merits. Claims 13-15 and 19 are canceled since they are drawn to non-elected claims. Claim 12 is incorporated into claim 8 so it is canceled. The limitation found in claim 16 is incorporated into claim 8, so it is canceled. Since claims 17 and 18 replicate claim 16, they are also canceled.

In review, claim 8 has been revised to: (1) further limit the steel material being processed; (2) further define the nature of the formed film; and (3) specify that the conversion treatment is carried out in the absence of fluorine ions. As noted above, the changes to claim are derived from other claims and no issues of new matter are raised by these changes. Claim 20 is added to specifically define the invention in terms of treating an oil well pipe.

In light of the changes to claim 8, it is submitted that the rejection based on United States Patent No. 5,797,987 to Rossio is moot and the only rejection to be addressed is that based on United States Patent No. 3,798,074 to Esler.

In the rejection based on Esler, the Examiner contends that Esler anticipates claims 8 and 12. The support for this allegation of anticipation is that Esler forms a protective surface film made of Zn using phosphoric acid and potassium. The Examiner also asserts that Esler does not use fluoride ions for the coating. Regarding the limitation regarding a conversion coating, the Examiner admits that Esler does not

mention this term. However, it is contended that since the same coating composition is employed by Esler, the same chemical conversion properties and film would be present.

First, Applicants wishes to reiterate the fact that the invention and Esler are not in the least related. Esler seeks to protect metallic or glass surfaces with a transparent and water resistant coating that is applied to the surface of the material being treated and cured. One primary purpose of the coating is to protect stainless steel from being scratched or marks, such marks being difficult to remove once they appear, see col. 6, lines 1-5.

In contrast, the invention is aimed at the ability to form a chemical conversion film using a chemical conversion treatment on materials containing high levels of chromium. The Background Art section of the application demonstrates that it has been difficult to produce such a chemical conversion film on oil well steel pipes containing high amounts of chromium. Prior art techniques are required to be practiced multiple times, but even still do not work on high chromium steels such as 13%Cr, see page 1, lines 20-28 of the specification. With the need to protect high chromium oil well pipes, a need has developed to form chemical conversion films on these materials to prevent galling during the threading process. The present invention has solved this problem by the discovery that the presence of potassium, preferably in the form of potassium tetraborate, is effective to keep the pH value of an aqueous solution of zinc phosphate and manganese phosphate constant when a steel material contacts a treatment solution so that a concentration of phosphoric acid (total acid strength) is stabilized to promote a chemical conversion reaction effectively.

Taking into consideration the obvious differences between Esler and the invention, Applicants respectfully traverse the rejection based on 35 U.S.C. § 102(b).

A first reason that the rejection is improper concerns the limitation in claim 8 that a chemical conversion film of a zinc or manganese phosphate type is formed on the 0.5 to 13% Cr steel. The only way that this limitation can be met in Esler is on the grounds of inherency since there is no mention whatsoever concerning a chemical conversion treatment liquid or formation of a chemical conversion film of a zinc-phosphate or manganese phosphate type. However, Esler teaches curing the coating for transparency and water resistance, see col. 6, lines 43-45. This curing is done at 400 °F, see claim 56, or 600 or 800 °F, see col. 6, lines 38-40. It is submitted that no chemical conversion film would exist after such a curing step and therefore, Esler cannot be said to inherently meet this claim limitation. If the Examiner persists in this line of reasoning, objective evidence is requested to demonstrate that the claimed process and produced film would be present when following the teachings of Esler.

Lacking the step of forming the chemical conversion film, the anticipation rejection cannot be maintained. Moreover, there is no basis from which to predicate a rejection based on 35 U.S.C. § 103(a). The Examiner has already admitted that Esler says nothing about forming a chemical conversion film on the metallic or glass surface. In order to proceed with a rejection based on 35 U.S.C. § 103(a), the Examiner would have to put forth some rationale to support the contention that it would be obvious to form the claimed chemical conversion film on the surface of the metal or glass using the claimed components. Lacking any recognition in Esler or elsewhere to support such a conclusion, proceeding in this manner would be the hindsight reconstruction of the prior art in light of

Applicants' disclosure. Put another way, any rejection based on 35 U.S.C. § 103(a) could not be sustained on appeal.

While the Examiner could contend that Esler's pre-cured coated product could be considered to anticipate claim 8, the problem with this approach is two fold. First, it is not clear from Esler that a chemical conversion film is formed prior to curing. Second, the intermediate product has no utility in the eyes of Esler.

As mentioned above, Esler makes no mention of a chemical conversion coating. Moreover, the manner in which the coating is achieved in the instant specification and Esler's approach are not the same. This difference also raises doubt about whether the Examiner can legitimately rely upon only on a compositional similarity to buttress the contention of inherency in the pre-cured product. This difference alone brings into question the question of inherency and demonstrates that the Examiner's basis in this regard is questionable and cannot support a rejection under 35 U.S.C. § 102(b).

The uncertainty of the makeup of the uncured coating of Esler precludes the Examiner's reliance on this produce from an anticipation standpoint. The uncertainty of the makeup of an intermediate product was noted in *In re Massoubre*, 165 USPQ 322 (CCPA 1970) as grounds for rejecting the allegation that the prior art intermediate product was the same as claimed. This case held for the patent applicant against a contention that the prior art intermediate product anticipated the claim. The patent applicant argued that the intermediate product had no utility. The CCPA sided with the Applicant stating:

Appellant's arguments concerning the intermediate product are persuasive, at least as to a conclusion that there is a lack of certainty as to whether such product is the same as that claimed. Irrespective of that, however, the reference did not recognize the intermediate and is devoid of

any teaching or suggestion that would render the claimed invention obvious.

The same situation is present here. Esler teaches nothing regarding the structure or utility of the non-cured coating on the metallic or glass surface. Lacking these teachings, the Examiner cannot speculate as to the makeup of the uncured coating and presume that it is the same as that produced by the inventive method.

Moreover, Esler does not teach any use for the coated glass or metal without the curing step. Esler specifically teaches in col. 5, lines 4-8, that the metallic or glass surface is coated with the solution and then cured to render it substantially water insoluble. Esler describes the coating as cured in col. 5, line 50. Therefore, the pre-cured product of Esler cannot be relied upon to support the rejection under 35 U.S.C. § 102(b).

Based on the above, Esler cannot be considered to teach the claimed method based on the formation of the intermediate product as an uncured coating on the glass or metal surface.

Claim 20 is considered to be separately patentable on the grounds that the invention provides unexpected improvements in the context of oil well pipes. As explained above, the prior art was seeking better ways to apply a chemical conversion film onto oil well steel pipes having high levels of chromium. Unexpectedly, the inventors have discovered a way to do this through the use of potassium and a chemical conversion treatment liquid containing zinc and phosphoric acid or manganese and phosphoric acid. This invention results in the ability to produce an effective chemical conversion film on oil well pipe steel material. The comparative evidence of the specification, see Tables 2-5 demonstrate the criticality of potassium in forming a uniform film that has good adhesion to

Serial No. 10/771,294

the material being coated. This evidence effectively rebuts any contention of obviousness as applied to claim 20.

In light of the above, it is submitted that Esler neither anticipate nor renders obvious claims 8 and 20 and these claims are patentably distinguishable over the applied prior art. Claim 9 is patentable based on its dependence on claim 8.

Accordingly, the Examiner is respectfully requested to examine this application and pass all pending claims onto issuance.

If the Examiner believes that an interview would be helpful in expediting the allowance of this application, the Examiner is requested to telephone the undersigned at 202-835-1753.

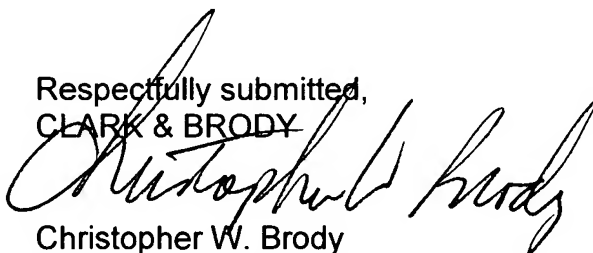
The above constitutes a complete response to all issues raised in the Office Action dated April 19, 2007.

Again, reconsideration and allowance of this application is respectfully requested.

A petition for a three month extension of time is made. A check in the amount of \$1,050 is enclosed to cover the cost of the petition fee.

Please charge any fee deficiency or credit any overpayment to Deposit Account No. 50-1088.

Respectfully submitted,
CLARK & BRODY



Christopher W. Brody
Reg. No. 33,613

Customer No. 22902
1090 Vermont Ave. NW Suite 250
Washington, DC 20005
Telephone: 202-835-1111
Docket No.: 12014-0010DV
Date: October 17, 2007